

# CLIMATE CHANGE AS A MODERN SECURITY THREAT<sup>1</sup>

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**Abstract:** Across the Earth, in everyday professional and scientific debates, climate changes are referred as a multidimensional global threat that represent a multiplier of various tensions over access to basic life resources which wane. Thus, in this paper we analyze the phenomenology of climate change that is brought into direct/indirect relationship with endangering the safety of human, material and cultural resources and the environment at the national and global levels. The paper also analyzes the impacts of climate change on increasing disaster risk, that every day increasingly destructive endangers the safety of people both by work and by nature of created value. At the end of the paper, the effects of climate change on water resources are presented. In conclusion, the authors point out that climate change is a reality that presents a significant security risk and a challenge, which have caused: the reduction of energy access, food availability, increased frequency and intensity of catastrophic natural disasters, population displacement, increasing public health problems, and lack of health safe drinking water. In addition, they actualize the idea that climate change poses a serious threat to national security and defense of the country, which was matter dealt mostly by activists and environmental experts in the field. However, lately climate change is beginning to be a subject of interest of politicians and security officials around the world.

**Keywords:** climate change, predictions, security, natural disasters, and water resources.

## INTRODUCTION

The idea that climate change poses a serious threat to national security is subject dealt mostly by environmental activists and experts of educational and scientific-research institutions in the field. However, lately climate change is beginning to be a subject of interest of politicians and security officials around the world.

In a discussion of the United Nations Security Council in 2012, The Secretary-General Ban Ki-moon said, climate change does not encourage only threats to peace and international security, but it itself is a serious threat to peace and international security (Barnett, Adger, 2007:102). In addition to Ban Ki-Moon and his predecessor Kofi Annan, addressing to the twelfth Conference of the Parties of the United Nations in Nairobi 2006, said, climate change is not just a problem for global warming. It is a comprehensive health and safety threat to countries around the world. It can threaten food supply

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around the world and the land from which half the world's population lives (Happer, 2012:31). In addition, the British Admiral Neil Morissette, who is in charge for climate issues and energy security in the British Ministry of Defense, was not indifferent and at a conference in London he emphasized the importance of considering the nature and reasons of migration of the population that lost its land due to climate change (Ball, 2009:23). In addition, he pointed out the fact that the mass migrations of people caused by climate change will produce conflicts around the world, which will have negative implications for different segments of defense, security and protection.

Thus, this paper analyzes the climate change as a contemporary security threat in the context of their impacts on increasing the risk of natural disasters as one of everyday forms of security threats, material, cultural resources and the environment where among other health safe water has an important place.

## PHENOMENOLOGY OF CLIMATE CHANGE

According to the U.S. Environmental Protection Agency - EPA it is stated that climate change is a significant change in climatic conditions, such as temperature, precipitation and winds that last for a decade or longer, and may result from: natural processes within the climate system (changes in ocean circulation), the change in the intensity of solar radiation, or human activities that affect the composition of the atmosphere (through the burning of fossil fuels) and the land surface (deforestation, urbanization, desertification) (Dimitrijevic, 2010:67). In addition, unlike climate change, the term „global warming” means that tropospheric temperature increase that contributes to changes in global weather patterns, and they are caused by increased emissions of so-called greenhouse gases, mainly carbon dioxide and methane (Environmental Protection Agency, 2007:78). The signatories to the UN Convention on Climate Change and the Kyoto Protocol in 1997, accepted that climate change carries many potential hazards, such as sea level rise, increased frequency of natural disasters, the spread of infectious diseases, decline in biodiversity and reducing the availability of food and water (Parry, 2007:11).

Given the extensive work on climate change, it can be said that the scientists agree that climate change is very likely caused the increase in sea level in the second half of the twentieth century; probable changes in wind patterns, affecting the directions of non-tropical storms and temperature patterns; probable increased temperatures of extreme hot nights, cold nights and cold days; rather than not increased the risk of heat waves, areas affected by drought since 1970s, and the frequency of heavy rainfall; warming that is the greatest over land and at the highest latitudes, and the lowest over the Southern ocean and parts of the north Atlantic; contraction of the area covered by snow, increased thaw depth in most areas and the reduction of sea ice; very likely increase in precipitation at high latitudes.

Thus, in general climate change has affected all natural processes, changing their many features that will have different effects on people, and one of them is certainly the increasing frequency of natural disasters.

## EFFECTS OF CLIMATE CHANGE ON NATIONAL SECURITY

Generally speaking, the problem of climate change has not been emphasized enough nor it has not been given the importance it deserves because of its direct impact on the population and the environment (Center for Naval Analyses, 2007:79). From the standpoint of safety, it may be given too little and too much importance to human, political and economic consequences, as well as to the

environmental consequences that could be caused by climate change. Among those who warn of the possible consequences of climate change, now are experts who are directly/indirectly involved in safety sciences (Executive Office of the President, 2010:31). The working meetings at national or international level, as well as within the United Nations Convention on Climate Change, as a rule, have been exclusively within domain of national Ministries of Environment. However, as knowledge on the subject is growing, it is clear that climate change cannot be limited only to the aspect of environmental protection. Therefore, over time it becomes clearer that climate change does not only affect the environment, society and economy, but also the global stability and national security.

Nonetheless, they generally were given too little importance, but that is slowly changing. In this regard, we can say that climate change is attracting increasing attention of successors of theories of human, sustainable and national security, and not necessarily only in the context of humanitarian aid in the event of a disaster (Ibarraran, Ruth, 2009). Unfortunately, as was the case with the adoption of the law on environmental protection in general, most of the new agreements, laws, regulations and strategies for the reduction and adaptation to climate change as well as the recognition of their importance for security will have to wait new even worse crisis than those caused by global warming.

Climate change increases the pressure on countries that already have problems with health of people, electricity supply, health drinking water and that struggle with severe demographic problems, says Admiral Neil Morissette, special envoy of the British government's climate and energy security (Schwartz, Doug, 2003:24). In addition, he believes that if the food supply - due to floods, droughts and other extreme weather events - become lower, it will strongly affect the political stability of the entire region, says Morissette. At the same time, he emphasizes that this is not only a problem of the poor, but of every country of the globalized world.

"Secret Pentagon report on climate 2008" states possible military consequences of climate change. Thus, for the period since 2010 to 2020 following predictions were given: Europe (2015: conflict within the EU over food and water supplies lead to skirmishes and strained diplomatic relations, 2018: Russia joins the EU, providing energy resources; 2020: migration from northern countries such as the Netherlands and Germany to Spain and Italy; Asia (2015: strategic agreement between Japan and Russia over Siberia and Sakhalin energy resources in 2018: China intervenes in Kazakhstan to protect a pipeline that regularly is attacked by rebels and robbers, the United States (in 2015: European migration to the United States; 2016: conflicts with European countries over fishing rights; 2018: concerned for North America, the United States formed an alliance with Canada and Mexico; 2020: Defence Ministry opens borders to refugees from the Caribbean and Europe (Official Journal, 2008:50).

The deputy head of the UN Environment Programme Achim Steiner said that climate change will pose a major threat to peace and security in the future (Bernauer, Tobias, 2012). At the same time, Germany has published the first report in which climate change is link to global peace and security issues. On that occasion, it was expressed concern about the possible negative consequences of climate change which in the long term may exacerbate existing threats to international peace and security"(Mazo, 2010:37).

In a new four-year report to Congress, the Pentagon planners classified climate change into security threats (Lee, 2009:21). This was preceded by the establishment of the Centre for climate change research at the Central Intelligence Agency – CIA. One intelligence official who follows the climate change said that he is always looking at the worst case scenario, and whether it is on global warming or the prospects of Country A invading Country B, he says that he only evaluates the most likely outcome, which is the worst, too (Lane, 2008:21). Military officials, trained to prepare detailed plans

for a wide variety of contingencies, have similar opinion. Vice Admiral Lee Gunn, Navy veteran with 35 year of service at the same time he is President of the American Security Project, said that "Americans expect that military have plan for the worst" (George, 2008:31). He added that it was, according to him, kind of thinking that has convinced most of the military leaders that climate change is a real threat and that the military plays an important role in dealing with it." In addition, climate change could affect the shipbuilding and aircraft construction because it must be taken into account that in 20, 30 or 50 years ships will sail and airplanes will fly in very changed circumstances. Among the scenarios that concern security planners is the melting of ice masses in the Himalayan mountain range. According to this theory, the rivers fed by the Himalayan glaciers will first flooded low-lying areas, and then dry up, with the disappearance of glaciers. That would jeopardize tens of millions of people in the lowlands of Bangladesh, causing mass migration, and then wars, according to military experts from the U.S. and the Indian subcontinent (Podesta, Ogden, 2007:116).

In theory, there are a number of different predictions, however, we should definitely mention this gloomy prediction that could very much affect the updating of defense plans worldwide (Busby, 2007:71): the wars in the future will be waged in order to survive, not because of religion ideology, or national honor; devastating storms will destroy the defensive coastal fortifications, so that large parts of the Dutch land will not provide conditions for housing, average annual temperature will drop to minus 13 ° C, climate in Britain will be colder and drier, while climate type will become similar to the Siberian, the number of deaths due to war and famine will grow in millions, population will decline, unrest and international conflict will torn apart India, South Africa and Indonesia; access of safe drinking water will become the main basis for the conflict, and the area around the Nile, Danube and Amazon are mentioned as high risk; significant drop in capabilities of the planet to serve population will become apparent over the next 20 years; rich areas, like America and Europe will become "virtual forest" that will stop the migration of millions of land submerged after sea level rise or the land that became infertile, waves of sailors will cause significant social problems; huge increase of nuclear weapons will be inevitable; climate will become an "economic problem", while storms, floods and heat hits will inflict great damage to farmers, more than 40 million people in subtropical regions are major risk factor, in Europe, internal conflicts caused by mass migrations from flooded coasts, immigrants from Scandinavia will seek warmer climes on the south, southern Europe will be flooded with refugees from the most affected African countries; massive flooding hit the main barns, including the American Midwest, where strong winds affect the fertile land; China will be especially vulnerable due to the large population and food needs; Bangladesh will be almost uninhabitable due to rising sea levels that pollute ground water supplies, and so on.

The most dramatic of these assessments is a report of the Ministry of Defense, which claims that climate change may potentially destabilize the geopolitical environment, leading to skirmishes, battles, and even war due to limited resources "(Lee, 2009:45). It identifies lack of food, water and disrupted access to energy as key influences that start the war, and talks in terms of "sustainability", "ancient hostilities", and the "fight for access".

There is a growing fear that the climate change that is already taking place, will have an even more terrible consequences in the future and cause instability and disorder at the national, regional and international levels, which could lead to armed conflict (Klare, 2001:31). In addition, the most violent conflicts are expected around regions that could become uninhabitable due to, for example, desert drought, rising sea levels, lack of safe drinking water (Tertrais, 2011:25).

Taking all into consideration, it can be said that climate change is not a reason for another conventional arms race, but the use of force (defense) is the part of 3D strategy (Trondalen, 2009:13).

Based on our current knowledge about climate change, security risks and threats that it might make in the future, climate change is just as important for the state as well as individuals, and will probably remain so until the end of this century, if not longer. Announcement of climate change as security risk is necessary and irreversible, and now is the right time for that to happen before the outbreak of a major ecological disaster.

#### THE CONSEQUENCES OF CLIMATE CHANGE ON INCREASING THE RISK OF NATURAL DISASTERS AS THREATENING APPEARANCE OF SECURITY

Climate changes increasing the average temperatures of the atmosphere, hydrosphere and lithosphere in various ways affect the increase in the frequency and intensity of natural disasters. Moreover, global warming is particularly affects hydrologic and meteorological disasters as they are in the closest relationship with the consequences of climate change.

In general, the overall increase in temperature leads to an increase in the number of hot days and decrease in the number of cold days, worldwide. In the middle and upper parts of the northern hemisphere, observations indicate an increase in precipitation, which contribute to the development of different types of floods and landslides and soil erosion (Wisner, 2004; Milojković and Mladjan, 2009). In some parts of the world, such as Africa and Asia, the frequency and intensity of droughts have increased in recent decades. Such changes are consistent with the intensification of the hydrological system. From 1900 to 2005 precipitation increased significantly in eastern parts of North and South America, northern Europe and northern and central Asia, but declined in the Sahel, the Mediterranean, southern Africa and parts of South Asia (Clifford, 2011). At the global level, the area affected by the drought is likely to increase since 1970s and it is very likely that over the past 50 years, cold days, cold nights and frost have been less frequent over most land areas, and that the hot days and hot nights have been more often (Sheffran, Battaglini 2011). Also, it is likely that heat waves are more common in most land areas, that in most areas there is increased frequency of heavy rainfall and that since 1975 frequency of extreme sea level rise has increased worldwide. There is also evidence, obtained by observing, on increase in the intensity of tropical cyclone activity in the North Atlantic, approximately since 1970 with limited evidence of an increase in other places. Predictions for the next century indicate that the number of hot days and very hot days will continue to grow, and that the number of cold and very cold day will drop in almost all regions of the world (Edward, 2005). In addition, the intensity and frequency of extreme precipitation will very likely increase in many areas, which will cause many floods and landslides. Moderate continental areas will be mainly dry, which will increase the risk of droughts and fires.

While the extreme temperature changes are quite expected, and in many areas, changes in the frequency of rainfall or drought can be foreseen with certainty, some small atmospheric changes are subject to greater uncertainty. This means that no reliable predictions for smaller phenomena, including thunderstorms, tornado, hailstorm, thunder and lightning. Taking all factors into consideration, we can say that global warming raises the temperature of the oceans and seas, which causes a variety of changes, and one of them is that warmer water increases the amount of moisture in the hurricane, as the warmer air contains more moisture. In addition, under appropriate conditions, most of the moisture is released in the form of large one-off rains and snowfalls, causing the flooding and the snowstorm. Partly because of this, a number of major floods on all continents have increased from decade to decade.

In many parts of the world, global warming raises the percentage of annual precipitation in the form of rain rather than snow, causing major flooding in the spring and early summer. Year 2005 in Europe was marked by unusual natural disasters. In the same year, a series of strong hurricanes unprecedented took place in the United States. In 2005, the news agency, "UPI", summarized the feelings of many Europeans when it reported that: Nature in Europe gone mad. Floods in Asia were also more frequent. In Mumbai (India), height of water sediment reached 94 cm in 24 hours (Arnett, 2011: 51). It was verily the greatest rainfall ever recorded in an Indian city. Record floods were recorded in China as well, which as one of the oldest civilization possesses the best record of flooding than any other country in the world. On the other hand, paradoxically, global warming causes not only more frequent floods, but also more droughts. Global warming, on the one hand leads that the ocean evaporates more water that accumulates in the atmosphere as hot vapor, and on the other hand, it drags out more moisture from the ground (Rajib, Sharma, 2011). Partly because of this, deserts have spread from decade to decade worldwide. One reason for this paradox is the fact that global warming not only increases the amount of rainfall causing severe flooding around the world, but it partially diverts them.

Therefore, it is quite clear that the rise in temperature is accompanied by a rise in natural disasters because of the processes that we have indicated. Of course, given that natural disasters result from a combination of natural processes and their consequences to people, it is clear that the violation of the natural process that is reflected in temperature changes, affects the natural disasters that are part of the same process in nature. Over the past decade, the disasters that were associated with the weather were the cause of up to 90% of natural disaster, 60% of deaths and were responsible for 98% of cases of the decline in the quality of life in the populated areas (Hyndman, et al, 2011:65).

## EFFECTS OF CLIMATE CHANGE ON WATER RESOURCES

Water with all its physical and chemical properties, is of great importance for life. It represents an existential basis of life and is the main ingredient of all living beings. Historically, the water drove development or limited the progress of each community from family to civilization. In addition, water has multiple functions, which can be clearly seen through its functions such as habitat for many organisms, important function in reactions of photosynthesis; solvent for all of the nutritional elements of the land; foods for the majority of living organisms, in its biogeochemical cycle it is the important transmission of energy; due to process of evaporation and condensation, and a relatively high heat capacity it is an important climatic factor in the heat balance of the Earth (Podesta, Ogden, 2007:118).

Therefore, without sufficient amounts of safe water, one country can not function properly. Its use and the need for it are so important that the term "water security" came into use, as the term for water use in negotiating and making a lasting peace based on international cooperation.

Widespread water shortages, reduction of arable land, reduced food supplies and fish, increasing number of floods and prolonged droughts are already happening in many parts of the world (Trondalen, 2009:46). In addition, climate change will certainly change rainfall patterns and further reduce the availability of safe water in some regions, leading to serious security conflicts.

Problems related to the lack of water resources and the absence of cross-border cooperation can lead to tension and conflict over water resources in any region of the world. If there is a depletion of water resources in certain regions of the planet, it will lead to serious security problems (Piguet, 2008). For example, sea level rise would erase some countries could from the world map, while other neighboring states could experience a major political, economic, military and social stresses (Barnett, 2011). The population of the affected territories, which would be faced with a lack of safe drinking water or sea-

level rise would massively migrated into the dry, water-rich areas, leading to serious conflicts that would cause tremendous consequences for both the national and international security as a whole. On the other hand, the countries that would not have felt the direct effects of sea-level rise, in some cases, could get some parts of the sea or ocean territory, which would affect the development of certain elements of the defense system (Cvetkovic, 2013).

## CONCLUSION

By studying the climate change as a contemporary security threat, we came to the following conclusions:

1. Climate change is beginning to be a subject of interest of politicians and security officials around the world, while at the national and international levels, discussion on the security implications of climate change becomes increasingly serious;
2. Predictions on international conflicts arising from climate change are premature, but not unfeasible, because climate change is recognized as a threat multiplier worldwide;
3. Climate change to a large degree increases the risk of natural disasters that pose a serious non-military challenge, risk and threat at national and global levels;
4. Climate change is likely to cause: loss of territory and border disputes, migration, worsening living conditions, tensions over energy supplies and strategic resources, and the potential conflicts for health safe water;
5. Defense, security and protection systems all over the world, including our country, are not yet sufficiently adapted to the changed security environment;
6. Climate change directly affects the quality and quantity of safe water, which wanes and will become the reason for future serious conflicts that will often be justified by various pretexts packaged in context of "humanitarian operations".

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